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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/050,437	01/15/2002	Lawrence W. Hrubesh	IL-10413	6489

7590 01/21/2004

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EXAMINER

LISH, PETER J

ART UNIT	PAPER NUMBER
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1754

DATE MAILED: 01/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/050,437

Applicant(s)

HRUBESH, LAWRENCE W.

Examiner

Peter J Lish

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 21 October 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1, 4, 6-8, 18 and 19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 4, 6-8, and 18-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

### DETAILED ACTION

Applicant's arguments filed 10/21/03 have been fully considered but they are not persuasive.

Applicant argues that the Stankiewicz reference ('149) fails to teach the use of a carbon aerogel precursor, teaching only the use of carbonaceous resin. While Stankiewicz does not explicitly teach that the furan resin or furfuryl alcohol impregnant forms a gel, it is known in the art to do so under the curing conditions taught by Stankiewicz (see Vinton et al., US 3,927,186) and therefore no difference is seen between the curing step of Stankiewicz and the gelling step of the instantly claimed invention.

Applicant argues that Stankiewicz does not teach the claimed step of heating to a temperature of 80 °C for 110 minutes on the basis that Stankiewicz also teaches additional heating steps. However, the additional heating steps do not negate the teaching of the initial heating step, to a temperature between 50 and 90 °C for 1-15 hours, as relied upon by the examiner.

Applicant argues that the heating of Stankiewicz, as above, is different from the "evaporation" of the claimed invention, yet no argument as to how they differ is provided. Thus it is maintained that while Stankiewicz may not explicitly use the term "evaporation", no difference is seen between the heating process of Stankiewicz and that of the instantly claimed invention.

Applicant argues that it would not have been obvious to modify the teaching of Stankiewicz, however, no modification is relied upon. It is maintained that it would have been obvious to select specific temperatures and times from the ranges disclosed by the reference.

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Applicant argues that the Stankiewicz reference does not teach the use of a solution containing a plurality of carbon aerogel precursors. This argument has been fully considered and is persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of the corresponding amended claims.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

***Claim Rejections - 35 USC § 102***

Claims 1, 6, 18, and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Droege (US 5,945,084).

Droege teaches a process for the preparation of open cell carbon foam/carbon substrate composites (column 14). The process comprises forming a reaction mixture, infiltrating a porous carbon substrate or porous organic substrate with the reaction mixture, heating at a gelation temperature to gel the reaction mixture, heating the composite at a curing temperature to cure the gel, drying the composite, and pyrolyzing the composite to carbonize. The substrate may take the form of papers, foams, fabrics, fibers, etc. The reaction mixture is preferably a solution containing a plurality of carbon aerogel precursors, such as resorcinol and formaldehyde. The drying may be achieved by any conventional method, such as supercritical evaporation using supercritical carbon dioxide, the preferred method comprises conventional air evaporation. No difference is seen between the process or product of Droege and that of the instantly claimed invention.

Claim 19 is rejected under 35 U.S.C. 102(b) as being anticipated by Pekala et al. (US 5,932,185).

Pekala teaches a matrix of porous carbon aerogel in intimate contact with a plurality of carbon fibers. No difference is seen between the composite material of Pekala et al. and that of the instantly claimed invention.

***Claim Rejections - 35 USC § 103***

Claims 4 and 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Droege as applied above.

Droege teaches the process of drying using evaporation wherein the drying temperature is between 50 and 150 °C and the drying time is between 1 and 96 hours. It would have been obvious to one of ordinary skill at the time of invention to select a time vs. temperature factor from within this range to achieve the desired effect.

Droege teaches that the process of gelling is typically performed between 20 and 70 °C for a time typically between 0.1 and 24 hours. It would have been obvious to one of ordinary skill at the time of invention to use a slightly higher temperature, such as 80 °C, which would allow for a shorter treatment time, because it would have been obvious to optimize the temperature vs. time factor in order to obtain the desired effect.

Droege teaches that the process of pyrolysis is typically performed between 600 and 3000 °C for a time typically between 1 and 6 hours. It would have been obvious to one of ordinary skill at the time of invention to use a longer treatment time, such as 8 hours, in order to ensure

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that pyrolysis and carbonization is fully achieved. Additionally, it would have been obvious to optimize the temperature vs. time factor in order to obtain the desired effect.

### *Conclusion*

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter J Lish whose telephone number is 571-272-1354. The examiner can normally be reached on 9:00-6:00 Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman can be reached on 571-272-1358. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

PL

A handwritten signature in black ink, appearing to read "Stuart L. Hendrickson".

STUART L. HENDRICKSON  
PRIMARY EXAMINER